We claim:

1. A method for augmenting erythropoiesis comprising contacting erythroid progenitor cells with an amount effective to augment erythropoiesis of at least one active agent comprising a sequence consisting of at least three contiguous amino acids of groups R^1-R^8 in the sequence of general formula I

$$R^1\text{-}R^2\text{-}R^3\text{-}R^4\text{-}R^5\text{-}R^6\text{-}R^7\text{-}R^8$$

in which R^1 and R^2 together form a group of formula

$$X\text{-}R^A\text{-}R^B\text{-},$$

wherein X is H or a one to three peptide group

R^A is selected from Asp, Glu, Asn, Acpc, Ala, Me^2Gly, Pro, Bet, $Glu(NH_2)$, Gly, $Asp(NH_2)$ and Suc;

R^B is selected from Arg, Lys, Ala, Orn, Ser(Ac), Sar, D-Arg and D-Lys;

R^3 is selected from the group consisting of Val, Ala, Leu, norLeu, Ile, Gly, Pro, Aib, Acpc, Lys and Tyr;

R^4 is selected from the group consisting of Tyr, $Tyr(PO_3)_2$, Thr, Ser, Ala, homoSer and azaTyr;

R^5 is selected from the group consisting of Ile, Ala, Leu, norLeu, Val and Gly;

R^6 is His, Arg or 6-NH_2-Phe;

R^7 is Pro or Ala; and

R^8 is selected from the group consisting of Phe, Phe(Br), Ile and Tyr, excluding sequences including R^4 as a terminal Tyr group,

and wherein the active agent is not AII.

2. The method of claim 1 wherein the active agent is selected from the group consisting of angiotensinogen, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO: 32, SEQ ID NO:33, SEQ ID NO: 34; SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:37, SEQ ID NO:38, and SEQ ID NO:39.

3. The method of claim 1 wherein the concentration of active agent is between about 0.1 ng/kg and about 10.0 mg/kg.

4. A method for augmenting erythropoiesis comprising contacting erythroid progenitor cells with an amount effective to augment erythropoiesis of an active agent comprising a sequence of the following general formula:

ASP-ARG-R1-R2-R3-R4-PRO-R5

wherein R1 is selected from the group consisting of Val, Pro, and Lys;

R2 is selected from the group consisting of Tyr, Tyr $(PO_3)_2$ and Ala;

R3 is selected from the group consisting of Ile, Val, Leu, norLeu and Ala;

R4 is selected from the group consisting of His and Arg; and

R5 is either Phe or is absent,

and wherein the active agent is not AII.

5. The method of claim 4 wherein the active agent is selected from the group consisting of SEQ ID NO:4, SEQ ID NO:19, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:31, SEQ ID NO: 32, SEQ ID NO: 34; SEQ ID NO:38, and SEQ ID NO:39.

6. The method of claim 4 wherein the active agent is selected from the group consisting of SEQ ID NO:4, SEQ ID NO. 31, SEQ ID NO 38, and SEQ ID NO. 39.

7. The method of claim 4 wherein the concentration of active agent is between about 0.1 ng/kg and about 10.0 mg/kg.

8. A pharmaceutical composition comprising an amount effective to augment erythropoiesis of at least one active agent comprising a sequence consisting of at least three contiguous amino acids of groups R^1-R^8 in the sequence of general formula I

$$R^1\text{-}R^2\text{-}R^3\text{-}R^4\text{-}R^5\text{-}R^6\text{-}R^7\text{-}R^8$$

in which R^1 and R^2 together form a group of formula

$$X\text{-}R^A\text{-}R^B\text{-},$$

wherein X is H or a one to three peptide group

R^A is selected from Asp, Glu, Asn, Acpc, Ala, Me^2Gly, Pro, Bet, Glu(NH_2), Gly, Asp(NH_2) and Suc;

R^B is selected from Arg, Lys, Ala, Orn, Ser(Ac), Sar, D-Arg and D-Lys;

R^3 is selected from the group consisting of Val, Ala, Leu, norLeu, Ile, Gly, Pro, Aib, Acpc, Lys and Tyr;

R^4 is selected from the group consisting of Tyr, Tyr(PO_3)$_2$, Thr, Ser, Ala, homoSer and azaTyr;

R^5 is selected from the group consisting of Ile, Ala, Leu, norLeu, Val and Gly;

R^6 is His, Arg or 6-NH_2-Phe;

R^7 is Pro or Ala; and

R^8 is selected from the group consisting of Phe, Phe(Br), Ile and Tyr, excluding sequences including R^4 as a terminal Tyr group,

wherein the active agent is not AII;

an amount of erythropoietin effective to stimulate erythropoiesis; and

a pharmaceutically acceptable carrier.

9. The pharmaceutical composition of claim 8 wherein the active agent is selected from the group consisting of angiotensinogen, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO: 32, SEQ ID NO:33, SEQ ID NO: 34; SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:37, SEQ ID NO:38, and SEQ ID NO:39.

10. The pharmaceutical composition of claim 8 wherein the concentration of active agent is between about 0.1 ng/kg and about 10.0 mg/kg.

11. A pharmaceutical composition comprising an amount effective to augment erythropoiesis of an active agent comprising a sequence of the following general formula:

ASP-ARG-R1-R2-R3-R4-PRO-R5

wherein R1 is selected from the group consisting of Val, Pro, and Lys;

R2 is selected from the group consisting of Tyr, Tyr $(PO_3)_2$ and Ala;

R3 is selected from the group consisting of Ile, Val, Leu, norLeu and Ala;

R4 is selected from the group consisting of His and Arg; and

R5 is either Phe or is absent,

and wherein the active agent is not AII.

an amount of erythropoietin effective to stimulate erythropoiesis; and

a pharmaceutically acceptable carrier.

12. The pharmaceutical composition of claim 11 wherein the active agent is selected from the group consisting of SEQ ID NO:4, SEQ ID NO:19, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:31, SEQ ID NO: 32, SEQ ID NO: 34; SEQ ID NO:38, and SEQ ID NO:39.

13. The pharmaceutical composition of claim 11 wherein the active agent is selected from the group consisting of SEQ ID NO:4, SEQ ID NO. 31, SEQ ID NO 38, and SEQ ID NO. 39.

14. The pharmaceutical composition of claim 11 wherein the concentration of active agent is between about 0.1 ng/kg and about 10.0 mg/kg.

15. A kit for augmenting erythropoiesis, comprising:

(a) an amount effective to augment erythropoiesis of at least one active agent comprising a sequence consisting of at least three contiguous amino acids of groups R^1-R^8 in the sequence of general formula I

$$R^1\text{-}R^2\text{-}R^3\text{-}R^4\text{-}R^5\text{-}R^6\text{-}R^7R^8$$

in which R^1 and R^2 together form a group of formula

$$X\text{-}R^A\text{-}R^B\text{-},$$

wherein X is H or a one to three peptide group

R^A is selected from Asp, Glu, Asn, Acpc, Ala, Me^2Gly, Pro, Bet, $Glu(NH_2)$, Gly, $Asp(NH_2)$ and Suc;

R^B is selected from Arg, Lys, Ala, Orn, Ser(Ac), Sar, D-Arg and D-Lys;

R^3 is selected from the group consisting of Val, Ala, Leu, norLeu, Ile, Gly, Pro, Aib, Acpc, Lys and Tyr;

R^4 is selected from the group consisting of Tyr, $Tyr(PO_3)_2$, Thr, Ser, Ala, homoSer and azaTyr;

R^5 is selected from the group consisting of Ile, Ala, Leu, norLeu, Val and Gly;

R^6 is His, Arg or 6-NH_2-Phe;

R^7 is Pro or Ala; and

R^8 is selected from the group consisting of Phe, Phe(Br), Ile and Tyr, excluding sequences including R^4 as a terminal Tyr group,

wherein the active agent is not AII; and

(b) instructions for using the amount effective of active agent to augment erythropoiesis.

16. The kit of claim 15 wherein the active agent is selected from the group consisting of angiotensinogen, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO: 32, SEQ ID NO:33, SEQ ID NO:

34; SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:37, SEQ ID NO:38, and SEQ ID NO:39.

17. The kit of claim 15 wherein the concentration of active agent is between about 0.1 ng/ml and about 10.0 mg/ml.

18. A kit for augmenting erythropoiesis comprising an amount effective to augment erythropoiesis of an active agent comprising a sequence of the following general formula:

ASP-ARG-R1-R2-R3-R4-PRO-R5

wherein R1 is selected from the group consisting of Val, Pro, and Lys;

R2 is selected from the group consisting of Tyr, Tyr $(PO_3)_2$ and Ala;

R3 is selected from the group consisting of Ile, Val, Leu, norLeu and Ala;

R4 is selected from the group consisting of His and Arg; and

R5 is either Phe or is absent,

and wherein the active agent is not AII; and

(b) instructions for using the amount effective of active agent to augment erythropoiesis.

19. The kit of claim 18 wherein the active agent is selected from the group consisting of SEQ ID NO:4, SEQ ID NO:19, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:31, SEQ ID NO: 32, SEQ ID NO: 34; SEQ ID NO:38, and SEQ ID NO:39.

20. The kit of claim 18 wherein the active agent is selected from the group consisting of SEQ ID NO:4, SEQ ID NO. 31, SEQ ID NO 38, and SEQ ID NO. 39.

21. The kit of claim 18 wherein the concentration of active agent is between about 0.1 ng/ml and about 10.0 mg/ml.

22. An improved cell culture medium for promotion of erythropoiesis, wherein the improvement comprises addition to the cell culture medium an amount effective to promote erythropoiesis of at least one active agent comprising a sequence consisting of at least three contiguous amino acids of groups R^1-R^8 in the sequence of general formula I

$$R^1\text{-}R^2\text{-}R^3\text{-}R^4\text{-}R^5\text{-}R^6\text{-}R^7R^8$$

in which R^1 and R^2 together form a group of formula

$$X\text{-}R^A\text{-}R^B\text{-},$$

wherein X is H or a one to three peptide group,

R^A is suitably selected from Asp, Glu, Asn, Acpc (1-aminocyclopentane carboxylic acid), Ala, Me^2Gly, Pro, Bet, $Glu(NH_2)$, Gly, $Asp(NH_2)$ and Suc,

R^B is suitably selected from Arg, Lys, Ala, Orn, Ser(Ac), Sar, D-Arg and D-Lys;

R^3 is selected from the group consisting of Val, Ala, Leu, norLeu, Ile, Gly, Pro, Aib, Acpc, Lys and Tyr;

R^4 is selected from the group consisting of Tyr, $Tyr(PO_3)_2$, Thr, Ser, Ala, homoSer and azaTyr;

R^5 is selected from the group consisting of Ile, Ala, Leu, norLeu, Val and Gly;

R^6 is His, Arg or 6-NH_2-Phe;

R^7 is Pro or Ala; and

R^8 is selected from the group consisting of Phe, Phe(Br), Ile and Tyr, excluding sequences including R^4 as a terminal Tyr group,

and wherein the active agent is not AII.

23. The improved cell culture medium of claim 22 wherein the active agent is selected from the group consisting of angiotensinogen, SEQ ID NO:2, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:5, SEQ ID NO:6, SEQ ID NO:7, SEQ ID NO:8, SEQ ID NO:9, SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:25, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:28, SEQ ID NO:29, SEQ ID NO:30, SEQ ID NO:31, SEQ ID NO: 32, SEQ ID NO:33, SEQ ID NO: 34; SEQ ID NO:35, SEQ ID NO:36, SEQ ID NO:37, SEQ ID NO:38, and SEQ ID NO:39.

24. The improved cell culture medium of claim 22 wherein the concentration of active agent is between about 0.1 ng/ml and about 10.0 mg/ml.

25. An improved cell culture medium for promotion of erythropoiesis, wherein the improvement comprises addition to the cell culture medium an amount effective to promote erythropoiesis of at least one active agent comprising a sequence of the following general formula:

ASP-ARG-R1-R2-R3-R4-PRO-R5

wherein R1 is selected from the group consisting of Val, Pro, and Lys;

R2 is selected from the group consisting of Tyr, Tyr $(PO_3)_2$ and Ala;

R3 is selected from the group consisting of Ile, Val, Leu, norLeu and Ala;

R4 is selected from the group consisting of His and Arg; and

R5 is either Phe or is absent,

and wherein the active agent is not AII.

26. The improved cell culture medium of claim 25 wherein the active agent is selected from the group consisting of SEQ ID NO:4, SEQ ID NO:19, SEQ ID NO:26, SEQ ID NO:27, SEQ ID NO:31, SEQ ID NO: 32, SEQ ID NO: 34; SEQ ID NO:38, and SEQ ID NO:39.

27. The improved cell culture medium of claim 25 wherein the active agent is selected from the group consisting of SEQ ID NO:4, SEQ ID NO. 31, SEQ ID NO 38, and SEQ ID NO. 39.

28. A novel peptide with erythropoiesis promoting activity, consisting of the sequence Asp-Arg-Lys-Tyr-Ile-His-Pro-Phe [SEQ ID NO:39].

29. A pharmaceutical composition comprising the peptide of claim 28 and a pharmaceutically acceptable carrier.

30. The pharmaceutical composition of claim 29 further comprising an amount of erythropoietin effective to stimulate erythropoiesis.

add A4

add B3